Special Issue

The Role of Soil Nitrogen Cycling and Its Impacts in Managed Terrestrial Ecosystems: A Shift with Environmental Changes

Message from the Guest Editors

Nitrogen (N) is one of the essential elements required in large quantities for plant growth and development. However, N is the most limited nutrient in the soil of most parts of the world. To meet the increasing demand for food from the growing population, the global application of nitrogen fertilizer has reached approximately 120 million metric tons each year. The low use efficiency of N fertilizer by plants is accompanied by a substantial loss of N from soil through leaching and runoff and denitrification processes as nitrous oxide gas (N2O)). This has greatly contributed to the offsite impacts in the associated watersheds (e.g., eutrophication) and an increase in the atmospheric N2O concentration and the global warming. A further understanding of the interactions of soil N dynamics and cycling processes etc. will be critical for developing cost-effective measures and strategies to maximize N use and minimize N loss and environmental impacts. This Special Issue will be a collection of related articles to reflect the current progresses in processes, mechanisms, and governing factors involved in soil N availability and cycling in managed terrestrial ecosystems.

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Deadline for manuscript submissions

closed (31 December 2022)

Nitrogen

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 2.8

mdpi.com/si/109990

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About the Journal

Message from the Editor-in-Chief

Nitrogen, the element that is intimately associated with essentially all processes on Earth, is the broad focus of a new online, open access journal. The intention of this publication is to offer a venue for research papers, reviews, short notes, and communications that have as a nexus this critical element.

Editor-in-Chief

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Author Benefits

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.7 days after submission; acceptance to publication is undertaken in 3.6 days (median values for papers published in this journal in the second half of 2025).

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